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**Patent and Trademark Office**

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EXAMINER

DI VERDI, M

ART UNIT

PAPER NUMBER

1755

8

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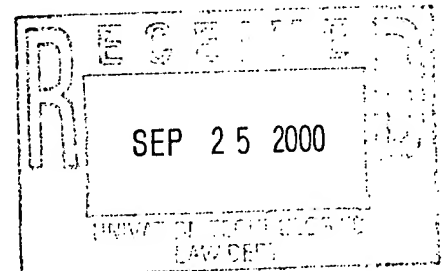
Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

DATE DOCKETED

9/20/2000

By JAK



# Office Action Summary

Application No.

09/113,216

Applicant(s)

Agaplos Kyriacos et al.

Examiner

Michael J. DiVerdi

Group Art Unit

1755



☒ Responsive to communication(s) filed on Jun 19, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1, 4-10, 13-20, and 23-120 is/are pending in the applicat

Of the above, claim(s) 40-120 is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1, 4-10, 13-20, and 23-39 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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***Response to Amendment***

1. Applicant's election with traverse of Group I, claims 1-39 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that a search for one group would necessitate a search for the other group. This is not found persuasive because the catalyst of Group I can be used in a process other than that of Group II such as hydrogenation reactions, and further, the search of the Group I catalyst does not require a search in the Group II area.

The requirement is still deemed proper and is therefore made FINAL

2. Applicants' cancellation of claims 2, 3, 11, 12, 21, and 22 as directed in Paper No. 7 is acknowledged. While applicants did not specifically state "cancel claims 11 and 12", they have been canceled in view of applicants' statement at page 2, line 19, i.e. "Claims 2, 3, 11, 12, 21, and 22 have been canceled." Claims 1, 4-10, 13-20 and 23-39 are currently being considered.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1, 4-10, 13-20, and 23-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 4-10, 13-20, and 23-39, the phrase "metallocene-type" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "metallocene type"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Is it a metallocene or not is the question?

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 4, 8-10, 13-17, 19, 20, 23-28, 30, 31, and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga *et al.* (EP 0 683 180 A2).

Suga *et al.* teach a polymerization catalyst comprised of a bulky metallocene compound and a carboxylate metal salt which is supported on an inorganic oxide. See page 4 for a list of suitable bulky metallocene compounds, in particular see lines 55-58 for bridged bis(cyclopentadienyl) zirconium compounds; page 7, lines 49-57, where groups 2-14 metal atoms of salts are described, in particular see line 57 where the  $\text{-OOCCH}_2\text{CH}_3$  group is taught as a suitable anion; and page 9, lines 28-29, where examples of the inorganic supports such as silica or alumina are taught. The weight percent of the metal carboxylate relative to the total weight of the catalyst is taught to be between 0.1-30%, which overlaps the current claim 9, 16, 19, 26, 27, 31, and 34 ranges. Overlapping ranges have been held to establish prima facie obviousness. MPEP 2144.05. Suga *et al.* teach an organoaluminum compound as an activator for their catalyst system. See page 9, lines 8-18. In Example 1, page 10, lines 44-51, the metal salt and metallocene are mixed for 1 hour before polymerization. This value is within the time ranges of claims 25, and 36-38. The numbers presented on page 9, lines 33-37, allow for weight ratios that are within the ranges stated in claims 31 and 35. Suga *et al.* fail to disclose an actual example where the metal salt is a metal carboxylate salt. It would have been obvious to one ordinarily skilled in the art of transition metal catalysis to prepare such a catalyst. The motivation would

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have been that a group 2-14 metal carboxylate salt such as  $\text{Al}(\text{OOCCH}_2\text{CH}_3)_3$  is clearly taught by Suga *et al.*

5. Claims 5-7, 18, 29, 32, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga *et al.* (EP 0 683 180 A2) in view of Hara *et al.* (EP 0 376 145).

Suga *et al.* is being relied upon for the same reasons as applied to claims 1, 4, 8-10, 13-17, 19, 20, 23-28, 30, 31, and 33-38 above. Suga *et al.* fail to teach a metal carboxylate where the alkyl group on the carboxylate has more than 2 carbon atoms. Hara *et al.* teach that aluminum carboxylate compounds where the R groups have between 1-20 carbon atoms are functionally equivalent for activating transition metal polymerization catalysts. See page 3, lines 27-33, where the  $\text{R}^1$  group in the formula  $\text{Al}(\text{OR}^1)_i\text{X}_{3-i}$  is defined as a hydrocarbon containing 1-20 carbons atoms that may contain a carbonyl group. It would have been obvious to one ordinarily skilled in the art of transition metal catalysis to use the system of Suga *et al.* and substitute an aluminum stearate compound  $\text{Al}(\text{OOC}_{17}\text{H}_{35})_x$  for the  $\text{Al}(\text{OOCCH}_2\text{CH}_3)_x$  compound of Suga *et al.* The motivation would have been that the metal carboxylate compounds have shown to be functionally equivalent by Hara *et al.*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. DiVerdi whose telephone number is (703) 305-0213. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 5:00 PM. The examiner can also be reached on alternate Fridays.

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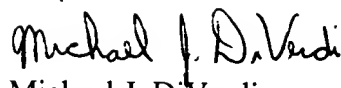
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.



Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700



Michael J. DiVerdi

September 18, 2000